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Forest
Service

**Southwestern
Region**

Prescott National Forest

Forest Plan Monitoring and Evaluation Report Fiscal Year 2012

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Section 1: Introduction

What is Forest Plan monitoring?

Forest Plan monitoring is an ongoing process that assesses the response of the forest environment to management activities undertaken to move the Prescott National Forest (PNF) from an existing condition to a desired condition, as described in the 1987 Prescott National Forest Land and Resource Management Plan ("Forest Plan," as amended, and as republished in December, 2004). As required by the 1982 planning rule, national forests must monitor and evaluate how well their forest plans are being implemented. This process includes opportunities for modifying the forest plan to respond to monitoring results.

What is the purpose of monitoring?

The purpose of monitoring and evaluating the implementation of the Forest Plan is to inform the decision maker of the progress that has been made toward achieving the goals and objectives and following standards and guidelines.

This report documents and evaluates the results of the monitoring that occurred during fiscal year (FY) 2012 (October 2011 through September 2012) and describes the rationale for any changes to the Forest Plan recommended by the monitoring team.

It also meets the intent of chapter 5 of the Forest Plan to "analyze and evaluate the significance of the results of the monitoring action plan" (p.73)[1]. Monitoring requirements included in the Forest Plan specify the effect(s) to be monitored, the measurement technique(s) to be used, and the expected future condition(s) to be met for each activity or project. They also establish a frequency for measuring and reporting the monitored item and the expected precision and reliability of that measurement. These monitoring requirements are available on the PNF website[2].

Lastly, it provides an important communication link with the public and within the agency. By disclosing the effectiveness of the Forest Plan, the PNF is able to better identify future research needs and to shift monitoring activities to more effectively measure overall forest health. In general, monitoring determines:

- If the PNF is achieving its objectives.
- If standards are being followed.
- If management prescriptions are responsive to public issues and management concerns.

[1] References to Forest Plan page numbers are for the 2004 republished version of the 1987 Forest Plan, as amended (version 1.1), available at: http://www.fs.usda.gov/detail/prescott/landmanagement/?cid=stelprdb5122087

[2] http://www.fs.usda.gov/detail/prescott/home/?cid=stelprdb5122087

- If management prescriptions are applied as directed.
- If the effects of implementing the Forest Plan are as predicted.
- If management practices on adjacent or intermingled non-national forest lands are affecting goals and objectives.

How are monitoring results used?

Based on the evaluation of the monitoring results, the monitoring team makes recommendations to the forest supervisor. These can include:

- **No action is needed.** Monitoring indicates goals and objectives are being reasonably achieved and standards are being followed.
- **Make a recommended action**. Refer recommended action to the appropriate line officer(s) for improvement or application of management prescriptions.
- **Make a Forest Plan amendment**. Modify the management prescription or assignment of a prescription as a Forest Plan amendment.
- **Revise the Projected Schedule of outputs.**
- **Identify research needs.**

It is important to note that this is not a monitoring report on individual projects; however, results of some individual projects have been considered in the preparation of this report.

Section 2: Monitoring Summary

Fire Management

Fire Preparedness

Periodic inspections and readiness reviews were used during FY2012 to validate that the fire management organization could function in a safe and effective manner.

Ground Conditions

Fall 2011 was above average for moisture, but winter and spring 2011-2012 were well below average for moisture. The fall moisture supported some initial growth of all types of plant life including grasses, shrubs, and trees but discontinued when precipitation diminished and spring temperatures began to rise. Also, some mortality of mid-elevation vegetation occurred in portions of Arizona and New Mexico. Some of this did occur in the chaparral vegetation type on the PNF, but was not as prevalent as some parts of Arizona.

The PNF implemented Stage 1 campfire and smoking restrictions on May 15, 2012. Restrictions were elevated to Stage 2 on June 8 as the fire danger continued to increase. Timely and adequate monsoon moistures permitted restrictions to be lifted on July 18. Moisture amounts and the lack of heavy lightning during the summer monsoon season was enough to restrict potential wildfire starts and spread. As a result, suppression efforts were successful for most wildfires after the start of the monsoon period. There was a partial closure on the PNF as a result of the Gladiator Fire which burned 16,240 acres on the Bradshaw Ranger District.

Moisture Levels

Below average winter moisture (January through March) caused elevated wildfire indices during the spring (May), but late spring moistures provided some relief. Table 1 depicts average moisture levels for weather stations located across the PNF. Wildfire indices again elevated to above normal conditions during May and June 2012, but timely and adequate monsoon moisture tempered conditions from the first week of July forward. By the latter part of July, the average to above average monsoon moisture levels carried the Energy Release Component (ERC) below average through September (Figure 1).[3] Tables 2 and 3 show moisture amounts received at various weather stations across the PNF during the course of FY2011 and FY2012.

Fire Activity

Statistically, the occurrence of wildfires in 2012 was below average. In terms of the acres burned, the fire season was above average.

Large wildfire activity on the Prescott NF was isolated to a single event, the Gladiator Fire. This human-caused wildfire started on May 13 as a result of a structure fire that quickly spread to the surrounding vegetation. The fire grew to 16,240 acres and was ultimately declared out on July 19. The fire burned through portions of the Castle Creek Wilderness, Crown King WUI and Ash Creek Non-WUI on the Bradshaw Ranger District. Emergency rehabilitation efforts were put in place after the fire, yet effects of the fire were a contributing factor to flooding and road damage during the monsoon season.

Monsoon activity resulted in 15 lightning-caused wildfires (Table 4), which is statistically well below average for the Prescott NF.

Tables 4 and 5 display the number, size, and cause of wildfires that occurred during 2011 and 2012. The majority of these fires were less than one acre in size.

Resource Objectives

There were no opportunities to manage wildfires for resource objectives other than full suppression. This was due to a lack of ignitions (lightning) where and when suitable conditions for managing fires existed. During FY2009, periodic moisture and moderate fire behaviors supported decisions to manage two lightning-caused fires (Hyde and Woodchute) with objectives other than full suppression. These wildfires successfully accomplished resource benefit objectives and functioned in a manner similar to pre-European settlement wildfires. These conditions and opportunities did not occur during FY 2011 or FY 2012.

Fire Assignments

As a result of fires across the country, fire management resources on the Prescott NF were engaged in management of wildfire with a focus on suppression, protecting values at risk, and minimizing impacts to the natural resources throughout most of the summer. Aircraft, crews, equipment and overhead were continuously assigned in support of wildfires locally, regionally and nationally. Opportunities for training and development were realized frequently during FY2012.

Monsoon moisture and lightning-caused wildfires did begin within their historic occurrence period. This caused an increase in

[3] The Energy Release Component is an index related to how hot a fire could burn. The ERC can serve as a good characterization of fire season as it tracks seasonal fire danger trends well. The ERC is a function of the fuel model and live and dead fuel moistures.

the numbers of wildfires but helped to lessen the fire intensities and severities. Most fire management resources within the southwest, including those on the PNF, experienced above average time supporting management and suppression of wildfires during FY2012.

Mechanical Treatments and Prescribed Fire

Both mechanical and prescribed fire treatments were used to reduce fuel loadings.

Mechanical mastication treatments that were originally contracted during FY2010 continued into FY2012. These treatments were conducted in stands of ponderosa pine, chaparral, and the woodland vegetation type to manage brush species, improve the fire regime condition class, enhance the ecosystem, and construct fuel breaks to support future prescribed fire activities. Approximately 6,000 acres of mechanical treatments have been completed since awarding the contract in 2010.

Prescribed fire was implemented on approximately 3,819 acres. This includes 3,719 acres in areas of ponderosa pine and chaparral within the wildland-urban interface (WUI). There was also 100 acres of prescribed fire in areas considered non-WUI. The objectives for all prescribed fire treatments included maintenance or restoration of fire as a natural process within fire-adapted ecosystems. Within the WUI areas, objectives also included reducing the risk of wildfire to life and property. Tables 6 and 7 display the number of acres treated by year and vegetation type since the PNF Forest Plan was approved.

Fuels Crew

All fuels management treatments on the PNF are monitored for before and after conditions. The PNF Fuels Crew established pre-treatment plots in areas proposed for prescribed burning and mechanical treatments. These plots included live and dead fuel loadings and pictures from the plot in each of the primary directions (north, east, west, and south). These same plots were re-measured and re-photographed immediately following the treatment and will be done again one year later. This information is stored in individual project records.

Table 1. Average moisture levels for the PNF weather stations

Weather Station	Oct 1-Dec 31	Jan 1–Mar 31	Apr 1-Jun 30	Jul 1-Sep 30	Totals
Iron Springs	3.83”	5.59”	1.81”	6.92”	**18.15”**
Crown King	5.24”	8.64”	1.90”	8.30”	**24.08”**
Verde	2.81”	3.35”	0.83”	4.84”	**11.83”**
Cherry	4.06”	4.72”	1.37”	6.13”	**16.28”**

Table 2. Moisture levels recorded at the PNF weather stations during FY 2012

Weather Station	2011	2012			Totals
	Oct 1-Dec 31	Jan 1–Mar 31	Apr 1-Jun 30	Jul 1-Sep 30	
Iron Springs	5.00”	2.01”	1.05”	11.06”	**19.12”**
Crown King	6.47”	1.67”	0.62”	18.28”	**27.04”**
Verde	4.36”	1.08”	0.28”	4.82”	**10.54”**
Cherry	5.29”	1.15”	0.03”	5.78”	**12.61”**

Table 3. Moisture levels recorded at the PNF weather stations during FY 2011

Weather Station	2010	2011			Totals
	Oct 1-Dec 31	Jan 1–Mar 31	Apr 1-Jun 30	Jul 1-Sep 30	
Iron Springs	6.22”	1.65”	1.08”	4.28”	**13.23”**
Crown King	6.99”	2.78”	1.56”	4.66”	**15.99”**
Verde	4.57”	1.20”	0.41”	5.97”	**12.15”**
Cherry	6.63”	2.70”	1.41”	3.65”	**14.39”**

Table 4. Wildfires on the PNF during 2011 and 2012

Wildfire size in acres	2011		2012		Totals
	Human caused	Lightning caused	Human caused	Lightning caused	
< 1 acre	24	41	20	13	98
1 – 100 acres	3	4	5	2	14
> 100 acres	0	0	1	0	1
Totals	27	45	26	15	113

Table 5. Wildfires greater than 100 acres on the PNF during 2011 and 2012

Year	Name	Size	Cause
2011	- None -	0 acres	N/A
2012	Gladiator	16,240 acres	Human

Figure 1. Fire Season 2012 Energy Release Component for the PNF

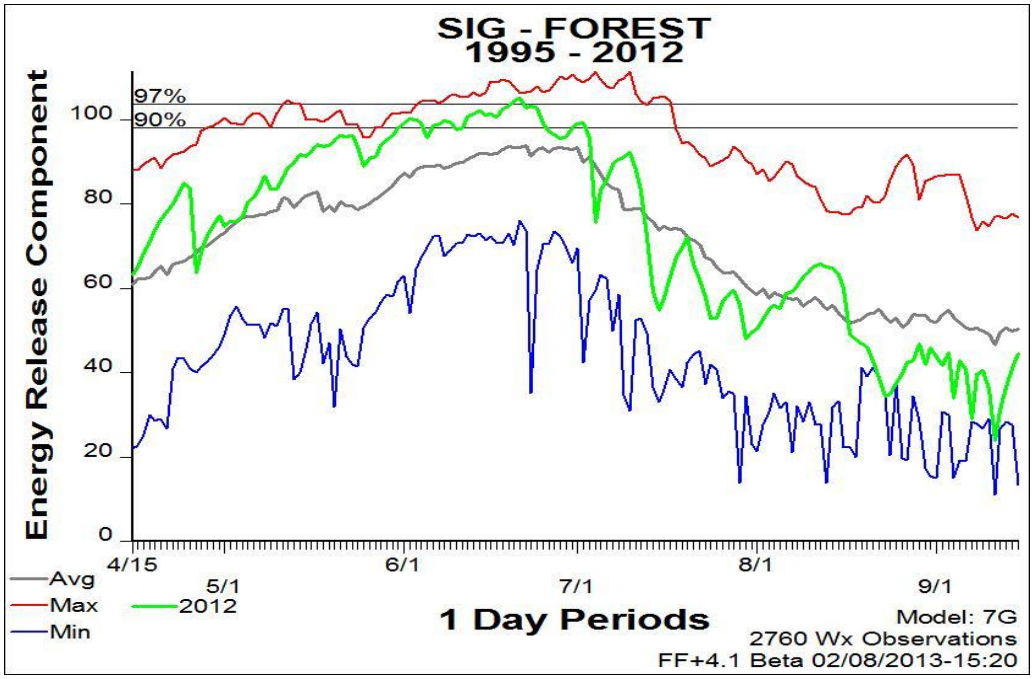

Table 6. Annual acres treated by vegetation type 1987-1999

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Grass	5,000	3,500	6,000	3,500	2,344	2,500	2,000	1,500	3,200	0	0	0	0
Chaparral	11,930	9,358	1,000	0	1,800	0	1,200	4,800	2,100	1,200	3,492	6,000	7,500
Pine	0	984	910	1,150	0	75	96	150	110	241	768	0	0
Woodland	0	0	152	270	410	1,176	0	0	0	0	0	0	0

Table 7. Annual acres treated by vegetation type 2000-2012

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Grass	3,000	6,000	0	0	0	0	0	0	0	0	0	0	100
Chaparral	2,500	8,000	300	7150	4071	5,483	4,300	3,866	5,885	6,383	9,700	9,850	1977
Pine	1,100	100	288	500	1800	667	5,500	4,518	7,236	3,016	3,800	2,650	1742
Woodland	0	1,000	0	0	0	0	0	0	0	301	500	500	0

Heritage Resources

The PNF manages 36 sites that are listed as National Register Properties. Since a number of these are Forest Service administrative sites that are actively being used, many are visited throughout the year by heritage resource management personnel. Those National Register properties that are not used on a day-to-day basis are visited less regularly. The less-visited sites are customarily checked as the opportunity arises, which usually occurs every few years. All 36 properties experience little overall change from year to year. Since most of these sites are historic properties, the primary activity involves routine maintenance. Forest maintenance funds for these sites are practically non-existent. Those that are visited continuously typically receive more maintenance. Prehistoric sites that are listed as National Register properties are more affected by natural processes than direct acts of vandalism. Overall, prehistoric sites appear to remained in fairly stable condition in 2012.

There were 49 heritage resource projects/reports completed in FY2012 on the PNF. The breakdown for the projects by Ranger District is as follows: Chino Valley 6; Bradshaw 22; Verde Valley 15; with 6 projects crossing district boundaries. Of the 49 projects/reports that were completed, 24 did not have archaeological properties and 21 did (four projects can be classified as “miscellaneous” and cannot be necessarily tied to specific archaeological sites but were part of an analysis). These 21 projects had sites associated with them, leading to either a “no effect” or a “no adverse effect” determination. All “no adverse effect” determinations required consultation with the State Historic Preservation Officer.

Twenty-six (26) new archaeological properties were recorded. Many sites were monitored as part of project activities. There were 92 previously recorded sites associated with proposed projects in FY2012. Any pre-project monitoring that was done consisted of assuring that sites were brought to the attention of the project manager and properly identified and marked for avoidance. In some cases, follow-up vists were made to sites that were identified for avoidance (sometimes more than once) during the life of a project to ensure that they are protected.

Monitoring also consisted of checking sites during non-project opportunities. Typically about 50 sites are visited during non-project-related fieldwork. These sites are located throughout the Forest and consist of prehistoric and historic sites that are listed as National Register properties or are those that are considered outstanding historic and prehistoric resources. In addition, some sites are selected for monitoring because of new or ongoing threats to their integrity even though they may not be listed as National Register properties or are outstanding heritage sites.

Over the years monitoring has revealed two principle ways that sites are impacted. The first involves environmental factors, typically related to weather events. Rain in the form of "downpours" creates sheet and rill erosion, causing artifacts to be displaced and archaeological features to be compromised. Although no quantitative data exist as to the seriousness of this problem, sites are being impacted when heavy rains occur. The most cogent example of this for 2012 was the

monsoonal rains that followed the Gladiator Fire in the Crown King area. Several historic sites were impacted by the fire itself and one prehistoric site was heavily damaged by post-fire flooding and erosion.

The second issue that affects site integrity is direct and indirect vandalism. During FY2012 about 14 incidences of vandalism were noted, and in some cases, some sites were affected more than once. Vandalism is typically represented by illegal digging, dumping trash on sites, mining, moving rock walls, defacing rock art, camping and building campfires on sites, riding off road vehicles through sites and other various and sundry acts. Vandalism is documented and filed with our archaeological site data and with the State of Arizona as part of the Arizona Site Steward Program.

In addition to monitoring National Register properties, monitoring efforts included checking a number of archaeological sites that fell within timber and fuelwood harvesting areas, prescribed burn units, brush crush units, and Arizona Public Service line maintenance vegetation clearing. This work included relocating and reflagging archaeological sites for avoidance.

Monitoring also occurred on several smaller projects, including trails projects, road improvement projects, mining projects, historic site improvements, and others. Some monitoring efforts do not get reported because they involve quick “spot checks" of known heritage resources when the opportunity arises. Overall, monitoring has been effective and helpful in our continuing efforts to protect prehistoric and historic resources.

Insects and Disease

Desired Condition

The PNF monitors insect and disease conditions annually in order to better predict future impacts. The desired condition is that insect and disease problems will not have serious adverse effects on the PNF due to an appropriate mix of silvicultural activities, treatment of slash, and various other control methods.

Ips Beetle

The PNF and adjacent State and private forested lands were surveyed for insect activity on August 20 and 22, 2012. Bark beetle activity increased from 85 acres in 2011 to 178 acres in 2012. Of the 178 acres, Ponderosa Ips activity was mapped on 165 acres followed by 5 acres of Douglas-fir beetle, 7 acres of western pine beetle, and only 1 acre of piñon Ips activity. Bark beetle activity remains minimal throughout Arizona.

Lands

A right-of-way was acquired in FY 2012 associated with an acquisition known as Packard Ranch.

Noxious Weeds

Surveys

Noxious and invasive weed species surveys are conducted yearlong across the PNF by trained personnel from various resource programs. Once these species are located, they are plotted and identified with GPS coordinates and added to the PNF's Weed Atlas and GIS noxious weed layer. This data is loaded into the Weed Atlas and is shared statewide in Arizona.

Treatments

The PNF accomplished 750 acres of noxious weed treatments in FY 2012: 112 acres on the Bradshaw Ranger District, 102 acres on the Chino Valley Ranger District, and 536 acres on the Verde Ranger District. Among the many weeds treated were tamarisk along the Verde River, Dalmatian toadflax, tree of heaven, and sweet resinbush. Both biological (e.g., insect releases) and mechanical (e.g., hand-labor) treatments were used, depending on the prescribed need for each individual weed. These treatments will help protect the biodiversity within each respective ecosystem and allow native species to thrive.

Community Involvement

The PNF continues to be involved in the Southwestern Vegetation Management Association and Yavapai Weed Management Areas. Participation in these weed management programs provides opportunity for networking of information on noxious weed species presence and eradication treatments with other Federal and State agencies and private entities.

Range Management

There are 62 active grazing allotments on the Prescott National Forest encompassing 1,278,935 acres. Of the active grazing allotments, 19 are used seasonally (31%) and 43 are used yearlong (69%). Allotments are managed using an adaptive management strategy whereby results from long and short term monitoring are used to guide managers concerning yearly stocking rates, pasture rotations, and whether other adjustments are needed in order to meet management

objectives and desired conditions for rangelands.

Figure 2. Monitoring the conditions of Hitt Wash riparian area on the K-4 Allotment in September 2012

Livestock Numbers

Actual numbers of grazing livestock on the PNF's range allotments was variable in 2012, with an overall stocking level of about 66% of permitted livestock numbers being authorized. The latest information from the forest database on livestock authorizations showed 137,014 Head Months of livestock use permitted (a Head Month is one month's use and occupancy of rangeland by a single animal, regardless of class of livestock, i.e. bull, cow and calf, or yearling all count as one "head"). The authorized use for 2012 shows 90,868 Head Months were authorized or about 66% of the permitted number of livestock. This reduction in authorized numbers is in response to the detrimental effects of drought conditions experienced across the PNF recurring frequently since 1996. Localized areas on the east side of the Forest experienced below-average summer rainfall in 2012, leading to reduced stocking. Range research has shown that maintaining conservative stocking levels is advised when drought conditions are present or likely. Grazing permittees have been cooperative in managing rangelands to promote drought recovery through reduced stocking and voluntary removals during all or part of the grazing season. Maintaining adequate vegetative groundcover on rangelands facilitates rainfall absorption into the soil, thereby promoting further plant growth.

Range NEPA

Two range National Environmental Policy Act (NEPA) decisions were completed in 2012: Buckhorn and Wagoner Allotments.

Grazing Capacity

Grazing capacity and management success of grazing operations is monitored in numerous ways:

- **Effectiveness Monitoring.** Monitoring of the effectiveness of grazing management in meeting the desired conditions that were established through the planning process and are incorporated into Allotment Management Plans. Vegetation and watershed health attributes that may be evaluated include plant frequency, species composition, canopy cover, and surface ground cover.
- **Annual range allotment inspections.** These determine the short-term needs for adjusting the authorized livestock numbers stocked within each allotment. The amount of forage removed by livestock after the use period, or grazing intensity, is evaluated to determine if the stocking level and amount of time in a pasture is in need of adjustment. Overall forage utilization is determined after the growing season. Yearly evaluations of forage production

and plant vigor are used to guide future stocking determinations.

- **Allotment Management Plan revisions.** Data collected via numerous monitoring methods for the assessment of existing resource conditions and the determination of desired conditions within allotments. This data is used to determine future courses of allotment management, and is part of the NEPA analysis process.

Effectiveness monitoring to determine plant frequency, ground cover, and plant species composition was conducted on the allotments listed in Table 8 in 2012. Allotments where information was collected in 2012 to determine existing conditions for allotment management plan revision is shown in Table 9.

Range permit compliance monitoring for range allotments "administered to standard" evaluated a total of 296,514 acres of rangeland in 2012. This monitoring included: accounting for the authorized/actual use livestock on the allotment; monitoring the livestock use on forage vegetation; ensuring pasture rotations were timely and followed; monitoring the maintenance of structural range improvements.

Table 8. Allotments monitored for effectiveness of management plan in meeting desired conditions.

Allotment name	Acres analyzed
Antelope Hills	1,340
Big Bug	14,733
Brady	2,898
Camp Wood	1,696
Granite	13,207
Grapevine	3,260
Perkinsville	24,959
Sand Flat	6,615
Toohey	4,887
Walnut Creek	7,094
West Bear/Del Rio	27,330
Yavapai	17,992

Table 9. Allotments with information collection for management plan revision

Allotment name	Acres analyzed
Hassayampa	3,171
K Four	7,964

Recreation

Camping

Campground use increased in fiscal year 2012 as compared to FY2011. Lynx Campground continues to be the most popular recreation site on the PNF with a 55.3% occupancy rate. Table 10 depicts occupancy rates in developed campgrounds across the forest.

Groom Creek Horsecamp was changed from Prescott National Forest reservation to the National Recreation Reservation System (NRRS). One of the areas within this campground was changed from reserved use to first-come first-serve use. These changes created inconsistencies in reporting and resulted in lower occupancy rates for 2012.

Concentrated developed recreation usage occurs on weekends during the spring, summer and early fall. In FY2012, there were approximately 74,920 overnight camping visits, including group sites, and 106,571 day-use visits. The overall recreation visitor day (RVD) is based on a RVD multiplier of 6 for an average 2-day camping stay. In 2012, the RVD total was 89,904. During the peak recreation summer months of June and July, campground occupancy averages 80 – 100% on weekends. However, occupancy over the seven month operating season is considerably less.

Table 10. 2012 Campground Occupancy Rates

Campgrounds	***2012 % Annual Occupancy***
Groom Creek Horsecamp	2.4*
Hilltop	31.3
Yavapai	12.3
Lower Wolf Creek	16.7
Lynx	55.3
Mingus Mountain	41.3
White Spar	18.0
Alto Pit OHV	10.0
Hazlett Hollow	8.9
Potato Patch	14.8

Designated Dispersed Camping

There are 109 designated dispersed campsites within the Prescott Basin. These sites do not have any facilities (trash, toilets, water, etc.) and no fee is required. Forest-wide dispersed site monitoring is conducted from April through October each year by Fire Prevention, Forest Protection Officer and Recreation Technician patrols. From November to March there are little or no patrols of dispersed camping sites. Volunteers are assigned the responsibility of inventorying, monitoring and maintaining each site throughout the year. When PNF employees

patrol and monitor these sites, they concentrate on fire prevention, camping day limits, compliance, and education. Volunteers clean and maintain camp sites, and report anything they feel is unusual about the condition or use of the specific area. The Community Forest Trust (a sponsored volunteer group that works in the PNF) and Yavapai County Probations assist the PNF in maintaining and monitoring dispersed camping sites.

Off-Highway Vehicle Use

The PNF has two developed off highway vehicle (OHV) areas: Alto Pit (in the Prescott area) and Hayfield Draw (in the Camp Verde area). Based on an analysis of fees collected for both OHV areas visits totaled about $ 5,336 in 2012.

Shooting Areas

Dispersed shooting areas have been observed forest wide by Forest personnel, volunteers and forest visitors every year. Some dispersed shooting sites are lightly used while others are heavily used and are very popular for gun enthusiasts. Often in the more popular sites, trash is dumped and used for target shooting. Heavily impacted dispersed shooting sites have been cleaned up and are monitored by the Community Forest Trust.

Verde Wild and Scenic River

The PNF manages 41 miles of the Verde Wild and Scenic River in cooperation with the Tonto and Coconino National Forests. Fourteen river patrols were conducted in FY 2012.

Trails and Wilderness

In 2012, Forest Service personnel, the Community Forest Trust, volunteer groups, and individuals worked on projects and Adopt-A-Trail programs to maintain approximately 170 miles of trail to Forest Service standards on general forest lands and in wilderness areas.

Table 11 displays the approximate number of visitors to the PNF's eight wilderness areas during FY 2011 and FY 2012.

Wilderness is categorized as "Primitive" in the Recreation Opportunity Spectrum rating. Only visits recorded at a trailhead register are included in these totals. This likely underestimates actual use because:

- Some visitors do not register.
- There is not a register at every trailhead.
- There are gaps in the data (e.g. missing register sheets)
- Emergency situations (e.g., fires and illegal activities) prohibit visitation on some or all trails in wilderness.

Table 11. Approximate Wilderness Visitation (Number of People)

Wilderness	2011	2012
Granite Mountain	**4,185**	**3,543**
Pine Mountain	**424**	**235**
Sycamore Canyon	**32**	**352**
Juniper Mesa	**265**	**116**
Castle Creek	**355**	**105**
Woodchute	**1,869**	**1,315**
Cedar Bench	**n/a**	**n/a**
Apache Creek	**n/a**	**253**
TOTAL	**7,130**	**5,919**

Roads and Facilities

Road Improvements

Within the PNF, 160 miles of National Forest System (NFS) roads were maintained to the designated maintenance standard, and 8.4 miles of user created routes were decommissioned. Efforts continued to implement the Travel Management Rule, by inventorying and signing NFS roads and installing signs to prohibit cross country motorized travel.

Facility Improvements

The Forest maintained 51 buildings to standard and made inroads to reduce operating and fixed cost by implementing energy efficiency improvement projects and reducing the facilities inventory.

Soil and Water

The majority of the soil and watershed work accomplished in 2012 entailed administrative work related to the Forest's priority watersheds identified in the Watershed Condition Framework (WCF). A Watershed Restoration Action Plan (WRAP) was completed for the Black Canyon 6th level Hydrologic Unit Code (HUC) and uploaded to the WCF website. Compilation of this WRAP entailed inventorying and identifying Essential Projects necessary to improve the watershed condition score. The following soil and watershed attributes were inventoried and site conditions assessed:

Table 12. Black Canyon 6th Level HU Soil and Watershed attributes inventoried and assessed.

Attribute	Unit	Unit of Measure
Soil Condition	5200	Acres
Riparian	10	Miles
Spring	2	Number

In addition, essential projects data associated with the Cherry Creek 6th Level HUC WRAP (completed in FY11) and Black Canyon 6th Level HUC WRAP, were input into the Watershed Improvement Tracking (WIT) database. Essential Projects identified in the Cherry Creek watershed were implemented and monitored as documented in the Watershed improvement Tracking (WIT) database. Type of work performed in the Cherry Creek watershed included: juniper thinning treatment, timber stand improvement, spring and riparian monitoring, erosion control, administrative closure of sensitive sites, soil condition monitoring, instream flow monitoring, contract and partner agreement preparation, erosion control and dispersed recreation design, and road and trail inventory and maintenance.

Figure 3. Within the Cherry Creek priority watershed, riparian and aquatic elements were monitored at the Log Springs site.

Specific soil and watershed monitoring accomplishment in the Cherry Creek Watershed include:

Table 13. Cherry Creek 6th Level HUC Soil and Watershed attributes monitored.

Attribute	Unit	Unit of Measure
Soil Condition	350	Acres
Riparian	3	Miles
Spring	3	Number

Timber

Timber Harvest

The acreages of intermediate harvest, regeneration harvest, and removal harvest is monitored to measure the attainment of treatment prescriptions and the effects of implementation. The desired condition is a more balanced age-class distribution, appropriate growing stock levels, and provision for wildlife habitat needs. All harvesting that occurred in both the ponderosa pine and piñon-juniper vegetation types in FY 2012 were considered intermediate harvests. The number of harvested acres for pine and piñon-juniper vegetation type from FY 1987 through FY 2012 is depicted in Tables 14 through 17.

Sawtimber and Fuelwood

Federal regulation requires the Forest Service to annually measure and report the amount of sawtimber offered for sale. In FY 2012, the PNF offered but did not sell any sawtimber, and sold 5,601 CCF of fuelwood. The Forest Plan identifies that the amount of fuelwood made available each year will be reported every five years (Table 18).

Table 14. Harvest history in pine vegetation types FY 1987-1998

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Regeneration Harvest (acres)	0	8	256	42	0	0	12	20	0	0	92	0
Intermediate Harvest (acres)	116	604	931	570	146	304	0	92	0	0	478	0

Table 15. Harvest history in pine vegetation types FY 1999-2012

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Regeneration Harvest (acres)	0	162	0	0	0	0	5	13	0	0	0	0	0	0
Intermediate Harvest (acres)	0	1,082	530	0	0	613	738	451	504	1,065	328	279	485	733

Table 16. Harvest history in piñon-juniper vegetation types FY 1987-1998

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Regeneration Harvest (acres)	0	0	32	0	0	0	0	0	0	0	0	0
Intermediate Harvest (acres)	0	0	47	166	0	0	0	0	0	0	0	0
Removal Harvest (acres)	0	239	211	44	70	202	240	120	212	247	256	256

Table 17. Harvest history in piñon-juniper vegetation types FY 1999-2012

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Regeneration Harvest (acres)	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Intermediate Harvest (acres)	0	0	0	0	0	0	0	0	45	120	80	314	599	375
Removal Harvest (acres)	256	250	255	250	55	55	40	67	0	0	0	0	0	0

Table 18. Fuelwood sold on the PNF FY 2007-2012

	2007	2008	2009	2010	2011	2012	**Total**
Fuelwood sold (cords)	7,811	6,568	7,644	7,768	5,617	5,601	**40,715**

Wildlife

Bald Eagle

In January 2012, PNF employees and volunteers monitored bald eagle winter roosts in the Prescott area, including one site on the PNF and three sites on surrounding areas. A nesting pair was seen near Lynx Lake along with an immature bald eagle. One adult and three immature bald eagles were seen at Willow Lake. One adult, two immature, and one unknown age bald eagles were seen at Watson Lake, and three bald eagles were seen at Goldwater Lake. For breeding bald eagles in FY 2012, two separate but simultaneous efforts occurred to monitor nesting bald eagles on different parts of the PNF.

The PNF continued their annual Challenge Cost Share Agreement with the Arizona Game and Fish Department to implement seasonal closures around bald eagle breeding areas on the Verde River and to monitor their behaviors. In FY 2012, the Ladders breeding area was monitored through the Nestwatch program. The Ladders area was occupied but did not have any nesting activity. The Coldwater area was successful in fledging one offspring. The TAPCO and Perkinsville areas were active but were not successful in fledging any young. The Towers nest site was unoccupied. In FY 2012, breeding bald eagles near Lynx Lake did not successfully nest.

Mexican Spotted Owl

The PNF surveyed Mexican spotted owl restricted habitat within the Prescott Basin in 2012 and did not detect any new territories. One of the MSO PACs (protected activity centers) was monitored for occupancy in 2012. The Tritle PAC was found to have two nestlings confirmed.

Northern Goshawk

The PNF monitored seven goshawk post-fledging areas. In addition, suitable goshawk habitat was surveyed within the Prescott Basin, Mingus Mountain, and Camp Wood areas.

Peregrine Falcon

The Thumb Butte and Granite Mountain territories on the Bradshaw RD were informally monitored in 2012 by volunteers with the Community Forest Trust with no conclusive results.

Southwestern Willow Flycatcher

The PNF did not monitor any populations or habitat for the Southwestern willow flycatcher; however, population monitoring may have occurred off the PNF by the U.S .Geological Survey and the U.S .Fish and Wildlife Service.

Yellow-billed Cuckoo

The PNF did not monitor any populations or habitat for the Yellow-billed Cuckoo.

Spikedace

Seven long-term sites on the upper Verde River were monitored in spring of 2012 for fish community structure and information on habitat conditions. Fish sampling methods included backpack electro-fishing and seining of habitats. Habitat conditions were documented with photos.

A total of 954 individual species were collected that were comprised of 4 native species and 6 non-native species. The fish community was dominated by non-native species (68%) with smallmouth bass comprising 35% of the total amount. The dominant native species was the desert sucker. Spikedace continued to be absent in fish surveys, as has been the situation since 1999. Monitoring of livestock river crossings at Perkinsville determined that effects to the habitat are minimal.

Gila Chub

Aquatic habitat conditions in Upper Water Spring and Middle Water Spring (Indian Creek), Little Sycamore Creek, and a portion of Sycamore Creek were altered by sediment and ash runoff due to the Cave Creek Complex Fire in summer of 2005. Gila chub habitat conditions were monitored by PNF personnel in portions of Indian, Sycamore, and Little Sycamore Creeks in FY 2012. Aquatic conditions continued to be altered in all occupied Gila chub habitat affected by the Cave Creek Complex Fire. Large woody debris in the stream channel coupled with high bedload material have filled in pools and reduced habitat.

PNF personnel assisted AGFD in Gila chub population surveys in portions of Indian, Sycamore, and Little Sycamore Creeks in October of 2012. Gila chub populations are present in all stream systems but at reduce numbers due to diminished habitat.

Gila Trout

In fall 2009, the Arizona Game and Fish Department (AZGFD) stocked Gila trout into Grapevine Creek, a tributary to Big Bug Creek in the Agua Fria River drainage. Two site visits were made by AZGFD to Grapevine Creek in 2012. Trout were observed throughout the stream reach. No reproduction has been documented. A supplemental stocking of 150 fish was made by AZGFD in Oct of 2012.

Figure 4. Narrow-headed gartersnake near the Verde River.

Mexican and Narrow-headed Gartersnakes

Surveys were conducted for Mexican and narrow-headed gartersnakes in the upper Verde River from May 29th to June 1st of 2012 under an agreement with Northern Arizona University. One sampling trip was conducted near Prospect Point. Sampling sessions consisted of three days and two nights at this location. Sampling methods included trapping with minnow traps and visual encounter surveys.

One adult and one juvenile narrow-headed gartersnakes were captured in the Prospect Point sampling location along the river. No specimens of Mexican gartersnakes were seen or captured at the sampling location.

Management Indicator Species

A Management Indicator Species Report was updated in FY 2011. Habitat and population trends are depicted in Table 19 below.

Table 19. Management Indicator Species Trends

Species	Habitat Trends	Population Trends
Aquatic macroinvertebrate	Riparian, aquatic, late seral - Stable	Stable
Goshawk	Ponderosa pine, late seral - Decreasing	Decreasing
Hairy woodpecker	Ponderosa pine, snags - Increasing	Stable
Juniper (Plain) titmouse	Piñon/juniper snags - Stable	Decreasing
Lucy's warbler	Riparian, late seral - Increasing	Increasing
Mule deer	Piñon/juniper, early seral - Stable Chaparral, early seral - Increasing	Decreasing
Pronghorn antelope	Grassland, desert shrub - Stable	Decreasing
Pygmy nuthatch	Ponderosa pine, late seral - Decreasing	Stable
Spotted (Rufous-sided) towhee	Chaparral, late seral - Decreasing	Decreasing
Tassel-eared squirrel	Ponderosa pine, early seral - Increasing	Stable
Turkey	Ponderosa pine, late seral - Decreasing	Increasing

Section 3: Progress toward Desired Condition

Fire Management

"*Provide for fire management support services necessary to sustain resource yields while protecting improvements, investments, and providing for public safety. In as much as possible, return fire to its natural role in the ecosystem.*" (Forest Plan, p. 14)

Resource Objectives

Prior to August 2006, the PNF Forest Plan allowed naturally occurring wildfires to be managed for the objective of resource benefits only in designated wilderness areas. During August 2006, the Forest Plan was amended (Amendment #16) to include additional areas outside of designated wilderness to allow this.

During FY 2009, two lightning-caused wildfires were managed with objectives that included resource benefits. These were the Hyde Fire (255 acres) located south of Hyde Mountain on the Chino Valley Ranger District and the Woodchute Fire (779 acres) located in and adjacent to the Woodchute Wildness Area on the Chino Valley and Verde Ranger Districts. From FY 2010 - FY 2012, there were no

opportunities to manage wildfires for resource benefit objectives. This was due to a lack of ignitions (lightning) where and when suitable conditions to manage fire existed.

Natural Role of Fire

The PNF is becoming successful in returning wildfire to its natural role in various ecosystems, even with the complexity of implementing this strategy at a larger scale. Use of prescribed fire is expected to continue with success in vegetation and fuels management to restore wildfire-adapted ecosystems.

Law Enforcement

"Improve the forest's law enforcement program by taking an aggressive posture that emphasizes good public education, better employee training, more employee field presence, increased line manager accountability, and increased public assistance." (Forest Plan, p. 14)

Law Enforcement employees on the Forest have a substantial amount of field presence and emphasize education through the use of the Forest Protection Officer program and with Fire Prevention Technicians. Law Enforcement has improved on the Forest as evidenced by the increasing trend in Law Enforcement activities on the forest for the past four years (2009-2012).

Heritage Resources

"*Heritage resources represent an opportunity for research, education, understanding and enjoyment that enhances their stewardship and protection.*" (Forest Plan, p. 12)

In general, budgets and staffing for heritage resources management are focused on project implementation. This involves direct on-the-ground fieldwork as well as consultation with federal and state agencies, and Native American Indian tribes, communities, and nations. On-the-ground work includes the inventory, documentation, and protection of prehistoric and historic sites. Consultation typically concerns the Arizona State Historic Preservation Office and, to a much lesser extent, the Advisory Council on Historic Preservation (ACHP). For 2012, no consultation took place with the ACHP.

Consultation with Native American tribes, communities, and nations occurs on a regular basis by the Forest Archaeologist, designated as the Forest's Tribal Liaison. The Forest is currently moving toward Line Officer (Forest Supervisor and District Rangers) direct involvement in consultation. The Prescott National Forest consults with 6 Native American Tribes.

Due to pressing matters concerning project implementation and consultation, and a lack of discretionary heritage resource funding, heritage resource personnel were not able to spend as much time as desired working on research, outreaches, education, and enhancement activities. PNF personnel did participate in several presentations and the annual Arizona ArchExpo that was held in Phoenix.

The PNF has a very active volunteer corps and through these dedicated individuals the Forest has been able to focus our efforts on several research topics. These include rock art recording, oral histories, and site documentation. In addition, volunteers have had a hand in improving an interpretive site and the reconstruction of several CCC features at a campground. Volunteers contributed 1,350 hours to the heritage resources program.

The PNF has numerous archaeological sites that are extremely visible and easily accessed. While the vast majority of sites are important from a research and traditional cultural property standpoint, most do not lend themselves to capital investment for the purposes of interpretation. On the other hand, opportunities for interpretation do exist, particularly for some of the larger sites and those that fit into a particular thematic category. Clearly, the opportunity for interpretation does not need to rely on a single location, but can focus on some broad pattern of history or prehistory as it relates to the PNF.

Lands

"*Conduct landownership adjustment, right-of-way acquisition, landline location, and special-uses programs to promote efficient management.*" (Forest Plan, p. 14)

The PNF lands staff continues to implement efficient land management practices through the effective use of land exchanges, special-use permits, small tracts, boundary survey and posting, and when necessary, encroachment resolution with the help of law enforcement. An accomplishment of particular note is the acquisition of the remaining 47.5 acres of the Packard Ranch, with Land and Water Conservation funds. The land is mainly floodplain and riparian in nature and includes the confluence of Sycamore Creek and the Verde River near the south entrance to the Sycamore Wilderness. Other accomplishments worth noting are the mark and post and maintenance of 10 miles of boundary to facilitate projects by the fire/fuels and vegetation management programs, and the assistance to law enforcement on 3 trespass cases.

Noxious Weeds

"*Prevent any new noxious or invasive weed species from becoming established, contain or control the spread of known weed species, and eradicate species that are the most invasive and pose the greatest threat to biological diversity and watershed condition.*" (Forest Plan Amendment #14, Final Environmental Impact Statement for Integrated Treatment of Noxious or Invasive Weeds, January 2005, p. 265)

Coconino, Kaibab, and Prescott National Forests

Completion of the Noxious Weed Environmental Impact Statement for the Coconino, Kaibab, and Prescott National Forests was beneficial in that it has helped the PNF manage the ever-increasing invasive weed species populations.

There are 27 noxious weed species found within the three national forests and 4 additional species on other adjacent lands. Currently, no other invasive species have been identified. The desired condition is to prevent any new plants from becoming established on national forest lands. Controlling these plants would promote ecosystem health and prevent losses in the productive capacity of the land.

Treatments

The Coconino and Prescott National Forests have focused weed eradication efforts on the middle reaches of the Verde River (from Camp Verde south to Childs) to sustain and protect the wild and scenic river designations.

The PNF treated a total of 750 acres of invasive weed species. Monitoring in 2012 revealed that biological treatments (e.g. insect releases) have been only moderately successful, while herbicidal and hand-labor treatments were effective and successful.

Range

"*Provide forage to grazing and browsing animals to the extent benefits are relatively commensurate with costs, without impairing land productivity, in accordance with management area objectives. Cooperate with other agencies and private range landowners to reduce impacts of livestock grazing. Identify and manage areas that contain threatened and endangered species of plants.*" (Forest Plan, p.12).

Healthy Forests Restoration Act

The twelve allotments that were monitored in 2012 to determine if desired conditions were being met all showed fair to good overall conditions of the vegetation and watershed. Due to the staffing level on the forest, effectiveness monitoring can only be performed on a portion of the active allotments each year. It is desirable to determine progress towards desired conditions for each allotment at least once in a 10-year period.

Drought Conditions and Indicators

Authorized livestock numbers in FY 2012 was 66 percent of term permitted numbers. This is partially in response to the ongoing effects of 15-years of repeated drought conditions and the effects that has on overall plant density and production. Monitoring of vegetation on a yearly basis is used to adapt stocking levels so supply and demand of forage remains in balance while sustaining productive capacity. Livestock numbers forest-wide increased 8% from 2011 to 2012 due to improvements in forage production shown in areas with adequate rainfall. Not all areas of the Forest had adequate rainfall in 2012, and some allotments have reduced overall stocking levels. Grazing permittees are actively involved in range inspections and surveys.

Forest research and range scientist have documented for years that climatic cycles of drought and wet periods often have more effect on vegetative ground cover than resource management activities (i.e., livestock grazing). The monitoring assessment noted that the climatic drought conditions over the last 15 years have reduced the frequency and density of vegetation particularity among the grasses and grass-like plants.

In 2012, Standardized Precipitation Index (SPI) drought indicators for the climatic region containing the PNF showed that the region overall was near normal for the 12 month period ending December 2012. Monsoonal moisture was generally good on the western half and northeastern portion of the Forest, and somewhat localized and spotty on the southeastern half. The summer rains began in mid- to late July, and continued through September, which is the typical pattern. Most forage grasses on the forest are warm-season growers, meaning they complete their life cycle in the late spring through summer, typically June through September. Warm-season grass production was generally good in 2012.

Structural Improvements

Range structural improvements listed in table 20 below will improve livestock distribution and healthy watersheds to sustain and improve productivity of rangelands.

Table 20. FY 2012 Range Structural Improvements

Description	Allotment
Fence construction, 2 miles	Big Bug
Reconstruct 4 miles of pasture interior fence	Bottle
Maintain 1 mile livestock trail	Brown Springs
Install 1,000 gallon storage tank and 0.8 miles pipeline from spring	Brown Springs
Submersible pump installed and windmill maintenance	Coyote
Construct 1 mile fence	Crooks/Maverick
Install new 1,000 gallon storage tank and pipeline at Wire Spring	Dugas
Install 2,500 gallon storage tank	Granite
Install solar panels, pump, ¾-mile pipeline, 5,000 gallon storage tank	Hitt Wash
Replace solar pump, control box on Cottonwood Basin water system	Horner Mountain
Gladiator Fire, 2 miles fence rebuilt	Peck Canyon
Gladiator Fire, replace 1.5 miles of pipeline	Peck Canyon
Construct ¾-mile of fence	Sand Flat
Replace Cottonwood windmill and add 2,500 gallon storage tank	Smith Canyon
Install 2 – 5,000 gallon storage tanks, 2 miles pipeline from well	Sycamore
Clean Ross Flat stock tank	Walnut Grove
Cleaned 9 dirt stock tanks	West Bear/Del Rio
Install 5,000 gallon storage tank at Willow Spring windmill	Willow
Construct 1 mile fence	Yolo North

Recreation

"*Recreation users enjoy a full spectrum of experiences and benefits in appropriately managed facilities and other forest settings. All recreation sites are managed at a capacity of use level that ensures that the natural resources will be maintained at a desirable condition over the expected life of the project and/or activity.*" (Forest Plan, p.12)

National Visitor Use Survey

Based on the 2007 PNF National Visitor Use Monitoring Survey (NVUM), completed every 5 years, visitors surveyed gave the PNF high marks for visitor satisfaction in all major categories: Developed Day Use and Overnight Sites, Wilderness, and General Forest Areas. A current round of NVUM surveys was completed in 2012, but results were unavailable to include in this report.

Recreation Opportunities

The PNF continues to actively upgrade developed facilities infrastructure and has a strong construction/reconstruction program in place for camping facilities and trails. The recreation team continues to rely heavily on volunteer help.

Diverse camping opportunities exist throughout the PNF at designated dispersed, undesignated dispersed, and developed sites. Managing 41 miles of the Verde Wild and Scenic River in cooperation with the Coconino and Tonto National Forests provides additional recreation opportunities for those visitors who wish to float the Verde River.

Recreation Planning

Recreation planning efforts seek to provide diverse recreation experiences. A mix of multiple uses and motorized and non-motorized trail opportunities is the primary focus for the next few years. The PNF recreation team has been involved with the development of a Sustainable Recreation Strategy. The team has collaborated with different agencies (e.g., Yavapai County, Bureau of Land Management, public interest groups) to include future recreational opportunities that "overlap" county, city, and forest boundaries. These multi-agency recreation opportunities would benefit Yavapai County community members.

Interpretation

Considerable progress has been made in providing interpretation of the PNF through environmental education, both within the trail program as well as through partnerships (e.g., Highland Center for Natural History).

Patrols and Volunteers

An agreement was developed with a volunteer group, the Community Forest Trust, which has helped to reduce the maintenance backlog on trails, designated dispersed campsites and at developed sites such as trailheads and picnic areas.

In the eight wilderness areas of the PNF, 94 staff patrols were completed by the wilderness ranger March through October. Volunteers contributed 1,200 hours of service in designated wilderness areas.

Developing an agreement with the sponsored volunteer group, Community Forest Trust, has helped reduce the maintenance backlog on trails, designated dispersed campsites, and developed sites (e.g., campgrounds, trailheads, and picnic areas).

Roads and Facilities

"*Maintain a transportation system to support resource goals. Construct, maintain and regulate use of Forest Service facilities to protect natural resources, correct safety hazards, reduce disinvestments, and support management activities.*" (Forest Plan, p.14)

Road Maintenance and Improvement

The PNF manages to maintain level three, four, and five roads to meet highway safety standards. In general, the base funding level only allows the PNF to address safety and the most critical resource protection needs. One hundred eight (108) miles of BMPs associated with roads were implemented. A combination of additional restoration funds, Burn Area Emergency Rehabilitation funds, non-appropriated funds, and timber sale purchaser work allowed us to implement BMPs on an additional 52 mile of roads. User created routes were identified, closed, and monitored on 8.4 miles in FY12.

Facilities Maintenance and Improvement

Budgets for facilities continue to decline. The PNF reduced some deferred maintenance and made progress to reduce operating costs by decommissioning three buildings and upgrading three HVAC units. Water systems are a priority and are safe and maintained to standard. All of the occupied buildings are safe for employee use.

Soil and Water

"*Protect and improve the soil resource. Provide for long-term water flow needs through improved management technology. Avoid adverse impacts to the public, Government facilities and all uses in floodplains and wetlands. Restore all lands to satisfactory watershed condition.*" (Forest Plan, p. 13-14)

"*Give riparian-dependent resources preference over other resources. Improve all riparian areas and maintain in satisfactory condition.*" (Forest Plan, p. 14)

Best Management Practices

Administrative monitoring of best management practices affiliated with mining operations, prescribed fire and fuel management, range allotment NEPA, rangeland management, timber harvests, roads, and recreation sites continue to be implemented. Findings from this monitoring are ongoing and are used to make adjustments to ensure the protection of watershed resources.

Soil condition monitoring occurred on approximately 5,020 acres. Approximately two miles of spring/riparian corridor were assessed. This occurred during the soil and watershed resource analysis for NEPA decisions involving range allotments.

Monitoring of surface water resources included installation of automated stream stage data recorders on streams selected for instream flow rights. These streams are Cherry Creek, Upper Ash Creek, Cienega Creek, and Big Bug Creek.

Monitoring of groundwater resources included supervision and evaluation of water supply pumping tests for the Western Resources Development – Powder Claims and the Milkmine mining projects.

Water quality monitoring was coordinated between ADEQ and the Forest for the Gladiator Fire, and several 303(d) listed impaired streams within the Forest.

For the second time, ADEQ reported an exceedance for e. Coli bacteria on Sycamore Creek. As a result, it is anticipated that ADEQ may list Sycamore Creek as impaired [303(d)] during the next State assessment of water quality.

PNF participated in several watershed groups in the local area including the Prescott Creek Watershed Improvement Council, The Upper Agua Fria Watershed Partnership, ADEQ TMDL meetings, and others.

Burned Area Emergency Response (BAER)

A BAER assessment and implementation of emergency treatments occurred in the Gladiator Fire area. The BAER team inventoried and assessed burn severity within the entire fire perimeter (16,212 acres). Emergency post-fire values at risk within the fire perimeter and downstream resources were assessed to determine if any of the following criteria were met: 1. threat to human life and safety; 2. risk to private lands; 3. potential unacceptable damage to natural and cultural resources. Emergency treatments were conducted to minimize post fire impacts which included: administrative closure of trails and portions of Senator Highway for forest visitor safety; identification of landslide areas along County Road 59; providing technical guidance to Yavapai County Emergency Service and Flood Control and Natural Resource Conservation Service Emergency Watershed Program; aerial mulching and seeding of approximately 120 acres to minimize accelerated soil loss, maintain soil productivity, and help protect downstream resources; assessment of historical hard rock mining sites subjected to fire; and heavy metal water quality monitoring in conjunction with Arizona Department of Environmental Quality.

Burn severity monitoring data were used to assess the condition of six watersheds affected by the fire. The watershed condition score for one watershed (Bear Canyon) was down-graded from "Functioning at Risk" to the "Impaired" category as a result of post fire impacts.

Initial implementation and effectiveness monitoring of the mulching and seeding efforts suggest soil stabilization has been more effective than expected and is assisting in maintaining soil productivity and minimizing downstream flooding.

Figure 5. Gladiator fire BAER mulching and seeding treatments provided rapid grass establishment and ground cover for soil stabilization.

Timber

"*Provide for non-declining sustained yield of timber. Establish improved balance in age-class distribution through silvicultural prescribed stand management. Focus on reducing constraining components of stand strata. Protect existing old-growth stands. Improve stand productivity through management. Provide green and dead firewood and other forest products on a sustained yield basis. Timber harvest will be used as a tool to accomplish multiple resource objectives when it is identified as the optimum method through site-specific environmental analyses.*" (Forest Plan, p. 13)

Fuelwood and Timber Harvest

In general, the PNF is moving towards desired conditions for age class distribution and productivity, although this is occurring at a rate that is slower than it could be. The PNF continues to supply fuelwood sufficient to meet existing demand.

During the first six years of Forest Plan implementation, the number of ponderosa

pine acres treated by intermediate and regeneration harvests was relatively constant. From 1992 until 2000, treatments were sporadic, and only the Maverick, Schoolhouse, Dearing, and Goldwater Timber Sales were offered. Since 2000, the PNF has offered and sold one timber sale per year. The sale offered in 2012 was not awarded before the end of the 2012 fiscal year. It will be included in the FY 2013 monitoring report.

The 1987 Forest Plan identifies 130,350 acres within the Pine Management Area (Management Area 4 or MA 4). Approximately 61,651 acres are tentatively suitable lands and 30,653 are considered commercial timberlands. An estimated 2,962 acres of commercial timberland in the Woodland and Chaparral Management Areas (MA 2 and MA 3) is also listed. Between 1987 and 2011, approximately 40 percent of the commercial timberlands have been treated.

Forest Health Emphasis

In 2006, the timber program moved toward a green tree harvest program that is typically found within the region. The objectives of a green tree harvest program are to improve forest health and wildlife habitat by thinning overstocked timber stands and to move the forest toward a more balanced age-class distribution.

The shift in management emphasis from harvesting timber for commodity production to harvesting timber for the purpose of restoring or improving forest health has facilitated the protection and recruitment of old growth trees.

Figure 6. Ponderosa pine stand after an intermediate timber harvest treatment. Untreated on the left and treated on the right.

Wildlife

"*Manage for a diverse, well distributed pattern of habitats for wildlife populations and fish species in cooperation with states and other agencies. Cooperate with Arizona Game and Fish Department to meet or exceed management goals and objectives in the Arizona Cold Water Fisheries Strategic Plan.*

Maintain and/or improve habitat for threatened or endangered species and work toward the eventual recovery and delisting of species through recovery plan implementation. Integrate wildlife habitat management activities into all resource practices through intensive coordination. Support the goals and objectives of the Arizona Wildlife and Fisheries Comprehensive Plan, as approved by the Southwestern Regional Forester and the Director of the Arizona Game and Fish Department." (Forest Plan, p. 13)

Benefits of Forest Health Treatments

Impacts to wildlife habitat from forest health projects are beginning to be realized as residual stands of trees begin to respond to treatments with more open canopies, more diverse understories, and increased herbaceous vegetation.

Wildlife populations are expected to shift accordingly to reflect these changed habitat conditions; wildlife species composition will shift toward those species that favor open forests with diverse age classes. Movement towards a more balanced age-class distribution and structure inherently supports a more diverse array of species.

Habitats in ponderosa pine and piñon-juniper vegetation communities will become more patchy and diverse than before, with open areas on south aspects and ridges. The open areas provide a greater diversity of understory vegetation and habitat for small mammals, birds, reptiles, and insects.

By improving plant species diversity in the understory, the increased habitat diversity provides a greater abundance of prey species for larger predators. Pockets of dense forest will remain in steep canyons and on north facing slopes. These areas provide habitat for those species needing higher tree densities.

Wildlife and Project Work

Wildlife habitat considerations are incorporated into the design and implementation of most projects including fuels reduction, forest health, livestock grazing, road use permits, small tracts acts, and recreation special use permits.

Wildlife and Partners

Working with partners including National Wild Turkey Federation, Arizona Game and Fish Department , Mule Deer Foundation and Spider Ranch, Coconino Rural Conservation Corp, American Conservation Experience, and Verde Watershed Restoration Coalition has enabled the Prescott National Forest to improve native riparian vegetation along the Verde River, pronghorn corridors, several springs, meadows, and water developments in addition to improving the herbaceous understory component of juniper habitat for a variety of species in all the respective habitats.

Threatened and Endangered Species

The delisting of the bald eagle continues to be successful because of management practices that are meeting the viability needs of the species.

Progress toward improving habitat for threatened and endangered (T&E) fish species on the PNF is uncertain. Habitat for endangered spikedace and other native fish in the upper and lower Verde River has been protected for several years from impacting activities, specifically livestock grazing and OHV recreation.

Beneficial effects to native species have not been observed in locations where established populations of non-native predatory fish are present. This is also the case in the lower Verde River where reintroductions of Colorado pikeminnow and razorback sucker have not been successful in spite of annual stockings since the early 1990s. Streams on the PNF with Gila chub populations such as Sycamore Creek and Little Sycamore Creek have experienced diminished populations and less occupied habitat due to the presence of non-native predatory fish.

The greatest short-term need for improving habitat for T&E fish species is the control and/or removal of non-native fish species from historical and current habitat, a task which falls under the jurisdiction of the Arizona Game and Fish Department. Another major concern is the increasing human population growth in the areas surrounding the PNF and the expected increase in water demand. Long-term efforts to manage fish habitat should focus on maintaining a natural water flow regime in key streams on the PNF.

Section 4: Barriers to Effective Monitoring

Heritage Resources

Budget constraints, workload, and a lack of personnel have prevented comprehensive monitoring of all sites eligible for and listed as National Register sites. The overall number of sites monitored in FY2012 was less than that of FY2011. Criteria used to determine which projects will be monitored include the density of sites in or near a project area, the magnitude of the project, the likelihood of vandalism, and the National Register eligibility of the sites.

Forest Plan monitoring has been effective in showing that overall protective actions have worked well. Successful site protection begins early in project planning by integrating protection measures into the planning process. This is followed-up by continuing to include a representative from Heritage resources throughout the planning phases.

Although good planning is the most effective way to protect sites, some mishaps have occurred in the past, chiefly due to a lack of communication or the failure of a site to be identified. Fortunately, this rarely happens.

In a related matter, when protective site measures such as flagging are encountered by the public they may sometimes remove these, including those that mark archaeological resources. In FY2012 this was not as big as an issue as it has been, but still remains are concern. The problem lies with certain forest users believing that the removal of markers or flagging impedes or slows down the project. It is likely that this behavior serves as a form of protest, with forest users perhaps thinking that they are protecting an area, whereas in actuality, their actions can lead to damaging important heritage resources. This is a problem that will probably remain for some time to come, which will require heritage resource personnel to continue to check sites several times until a project is completed.

Funding has, and will probably continue to be, an issue with monitoring. As project work plans are developed at the beginning of each Fiscal Year, monitoring funds need to be figured into the plans. Significant time and effort have been focused on pre-project planning, coordination with the project manager, consultation with the State Historic Preservation Office and Native American tribes, communities and nations, and follow-up record keeping. Individually these items are not barriers to effective monitoring, but taken together, they have created a significant impact on the time available for monitoring activities and our proactive efforts to manage heritage resources. Monitoring is recognized on the Forest as an important, even vital, activity, though this reality is not reflected in current funding mechanisms, staffing, or priority work plan.

Noxious Weeds

Administrative Barriers

Budget constraints and the lack of a full-time PNF weed program manager position have prevented extensive monitoring and more extensive treatment of noxious and invasive weeds.

Range Management

Administrative Barriers

Budget constraints limit the number of range management specialist personnel that are available to conduct monitoring of range conditions. The Southwest Region and the PNF has made range Rescission Act NEPA for permit reissuance a priority and, consequently,

administration and monitoring have not been as extensive as desired.

Recreation

Time Interval for Visitor Monitoring

The establishment of the National Visitor Use Monitoring (NVUM) program as a national standard has provided and continues to provide consistent data for day-use developed areas, overnight use developed areas, wilderness, general forest area use, and view corridors. As each national forest completes more NVUM surveys, the quality and accuracy of the data improves. The PNF completed its third NVUM survey in 2012, but results were unavailable at the time of this report.

Wildlife

Ineffectiveness of the Forest Plan

As in previous years, the items identified in the Forest Plan for monitoring are not always relevant to determining progress in meeting Forest Plan goals. Monitoring non-game birds, as a measure of determining the health of riparian associated species, is probably not useful in measuring the accomplishment of PNF goals.

Wildlife population monitoring is a challenging task as cause and effect relationships are hard to determine because of extrinsic factors (e.g., neo-tropical migratory bird populations may be influenced by factors in other states or countries). Such an undertaking needs to be closely coordinated at a larger geographical scale involving other entities.

To be effective, monitoring needs to be simple and easily implemented while providing a true picture of progress toward an objective. There is a need to adapt monitoring so that changes can be made in on-going programs/projects as soon as potential problems are identified.

Legal Requirements

The requirements for environmental documentation have become very complex for wildlife and change frequently. In addition, litigation-inspired legal interpretations of the requirements for Management Indicator Species analysis and migratory bird analysis (added by Executive Order in 2001) continue to add to the environmental analysis workload.

Alternatives for Accomplishing Monitoring

Barriers to effective monitoring primarily include lack of funding. A potential tool to overcome this obstacle is partnering with groups or entities that have the skills and resources to do the monitoring. Partnering with outside entities to accomplish monitoring would provide a larger perspective and more comprehensive relevance when considered with monitoring beyond our boundaries.

Section 5: Emerging Issues

Fire Management

Widespread Issues

A combination of circumstances has made the public very aware of fire management actions and practices on lands managed by Federal and state agencies across the Nation. This level of awareness has been extremely prevalent in all communities within and adjacent to the PNF. These circumstances include:

- an increase in vegetation and fuel loads resulting from the lack of wildfire in its natural role in fire-adapted ecosystems
- the effects of a long-term drought
- an increase in the number of homes and human access (wildland-urban

interface) in and adjacent to national forest lands

- recent, high-profile catastrophic wildfires in Arizona and across the Nation where lives and homes have been threatened and lost (e.g., Indian Wildfire in Prescott in 2002, Lane 2 Wildfire in Crown King in 2008, and Gladiator Fire in Crown King in 2012)

Challenges to Managing Wildfires

The threat of large, high-severity wildfires has substantially increased public awareness of fire management practices and actions with an expectation that efforts will be made to protect lives and homes. This increased interest has provided many opportunities to work with individuals, groups, and other agencies to reduce these threats, but it has also created many challenges. These challenges include:

- increased treatment opportunities and needs with a limited budget
- varying levels of expectation by the public with some wanting aggressive treatments adjacent to their neighborhoods and others wanting little or no treatment
- reduced numbers and types of resources that are available for wildfire suppression and fuels management actions

Smoke Emissions

Smoke generated by prescribed fires has become one of the most challenging issues. Smoke emissions from all prescribed burns during FY 2012 were permitted and monitored by the Arizona Department of Environmental Quality (ADEQ).

Prescribed burns in FY 2012 were managed with objectives and techniques designed to reduce smoke intensities and the length of time that smoke was present. These techniques included size and locations of burns and timing and days of continuous burning in any single airshed; however, smoke issues did and will continue to persist.

Prescott sits in a low-lying area (Prescott Basin) that attracts and holds smoke as do the communities located within the Verde Valley. This smoke can come from various and multiple locations and smoky conditions can linger for several days following the completion of a prescribed fire or unplanned wildfire.

Even at low concentrations, smoke can reduce visual qualities and may cause health problems, especially to those with breathing disorders or hypersensitivity to smoke. Smoke in the air or even notification through the media that burning is planned generates numerous phone calls to local Forest Service offices. Keeping the public informed about fire activities and potential smoke concerns is a major part of managing both prescribed burns and wildfires.

Heritage Resources

Sensitivity to Tribal Values

Native American tribes, communities, and nations receive notices of PNF projects and occasional meetings. Native Americans have not only shown interest in specific sites where their ancestors lived, but also in large areas where certain cultural practices took place. The future challenge for the PNF is to work effectively with tribes, communities, and nations so that these areas can be identified and managed in such a way as to show PNF sensitivity to tribal values. It behooves this Forest to move toward completing ethnographic studies for those

tribes, communities, and nations that claim affiliation with lands contained within the PNF boundary in order to better understand where these areas exist.

As noted previously, consultation with Native American tribes, communities, and nations occurs on a regular basis by the Forest Archaeologist, designated as the Forest's Tribal Liaison. The PNF is currently moving toward Line Officer (Forest Supervisor and District Rangers) direct involvement in the consultation process. It is expected that this will enhance the PNF's relationship with tribes, communities, and nations because those who have decision making responsibility will be ones interacting with tribal governments.

Presently, the PNF consults with six Native American Tribes. While none of these tribes have lands bordering or within the PNF, they do indeed identify with the PNF. In some cases these tribes are tied ethnographically to the PNF, while in other ways, they are associated through oral tradition and the material remains left behind long ago.

Another issue that seems to affect sites in the PNF is the increase in forest visitation. As a general rule, as more people use the Forest, the chances are increased that sites will be impacted either through direct acts of vandalism or through collateral damage. It is suspected that the increased use of all-terrain vehicles (ATV) are damaging sites, but while we have seen this sort of effect in the PNF, we do not have adequate data to know how large the problem might be. It is doubtful that this activity is ever directed at damaging sites willfully; more likely it is related to the versatility of these machines being able to travel off of designated routes and forest users simply not being aware (or care) that they can damage sites. Clearly, the machines allow forest users to access remote locations of the PNF, thereby allowing them to visit sites that were once protected by their inaccessibility.

In addition to providing greater access to heritage sites, ATV use and mountain biking has spawned new, user-created trails (also called social trails) around the Forest and, in some cases, altered existing trails. When new social trails are created or when existing trails are altered, heritage resources are in danger of being affected by direct impacts. Travel Management Regulations and education may help improve this.

One of the ways to increase the appreciation of heritage resources is through interpretation. There is a need to augment our interpretation of heritage resources and to spread the message about the protection of prehistoric and historic resources. Disseminating information to the public about heritage resources can be a key component for protecting against direct and indirect impacts to prehistoric and historic sites.

Noxious Weeds

Increased Spread

Noxious weed populations continue to expand annually over the PNF. Additionally, critical habitats, wilderness areas, and wild and scenic river designations across the PNF are threatened by the spread of noxious weeds.

The 2012 watershed condition classification of the PNF found 6 percent of the Groom Creek watershed to be infested with noxious weeds, compared to about 2 to 3 percent on average forest-wide. Currently, the area with the greatest increase is the Prescott Basin, located immediately south and west of Prescott.

Noxious weeds are found in most recreation areas (e.g., campgrounds, trails, day-use areas, and dispersed recreation areas). Recreation personnel and volunteers continue to assist with mapping and treating these areas.

Range

Drought Conditions

Effects of the extended 15-year drought on PNF rangeland conditions are still present, although recovery from the severe impacts witnessed in 2002 is evident. Drought recovery in plant density, frequency, and cover requires time and prudent management in the arid Southwest environment. Adaptive range management practices, effective communication, and timely actions between the agency and livestock producers have been critical in managing drought issues and managing the impacts on range conditions and annual livestock stocking capacity across the PNF. Although precipitation levels in 2012 were near normal in most areas of the forest, the pattern of prolonged drought is likely to persist.

Recreation

Increased Demand and Use

Population increases within Yavapai County continue to create pressure for additional diverse recreation opportunities. There is a need in the north Williamson Valley area for more recreation opportunities in the Walnut Creek/Camp Wood area. Similarly, increased amounts of dispersed recreation activities are occurring in the upper Verde River watersheds including camping, picnicking, and off-highway vehicle use. Several roads that were frequently used by motorized recreationists near segments of the upper Verde River have been closed and patrolled. These efforts have been successful in dramatically reducing illegal motorized use in this area.

Wilderness Concerns

The number of visits to the PNF's eight designated wilderness areas may increase as more people move to Yavapai County. Impacts to natural resources within wilderness areas will need to be documented, monitored, and maintained continuously. The presence of noxious weeds in wilderness areas will also need to be documented. Wilderness education has been recognized as a way to help prevent negative impacts to wilderness, and a wilderness education plan has been established to address this need.

Roads and Facilities

Decreased Funds

Trends in the roads budget indicate that the PNF will do less maintenance for resource protection on level one and level two roads. Most of the funding will be used to maintain levels three, four, and five roads to highway safety standards and to only address critical safety concerns on the remainder of the inventory. The Forest is trending toward a minimum road system needed for safe and efficient travel and for administration, utilization, and protection of NFS lands. Efforts will increase to seek additional funding sources and development of partnerships to maintain the transportation system.

Trends in the facilities budget indicate that the PNF will be challenged to maintain facilities in a safe manner. Given the aging infrastructure, the deferred maintenance may increase faster than the capability to make improvements. The Forest will continue to reduce inventory and emphasize energy and water conservation improvements in existing facilities.

Motorized Travel

Efforts continue to enforce, educate, and engineer the implementation of the MVUM, it is expected that there will be increased use of the designated road and trail system and decreased cross-country travel and resource damage.

Timber

Excessive Fuels

The most critical resource issue facing the PNF is the density of overstocked ponderosa pine stands. There is a continued need to treat these stands to prevent extensive insect infestation, reduce the potential for crown fires, and improve overall forest health. The existing timber industry infrastructure has allowed for the purchase, removal, and utilization of the wood that has been offered for sale, and it is critical that this infrastructure remain intact.

Public Awareness

Cultivating public awareness and acceptance of the need to use timber sales as a way to treat hazardous fuels and improve forest health in the wildland-urban interface continues to be a vital aspect of the timber program. As such, the wildland-urban interface is an increasingly important geographic area for natural resource interpretation and public information efforts.

Wildlife

Pronghorn

Pronghorn continue to receive increasing attention statewide as their habitats decline. Habitats on the PNF are becoming more important as threats continue to increase across their range. These threats include:

- Habitat fragmentation and population isolation as a result of increased transportation infrastructure and expanded road and travel systems.
- Housing developments on private land, with subsequent roads, fences, and other associated amenities continue to reduce the quantity and quality of optimum pronghorn habitat.
- Human disturbance is increasing on both private and public lands.
- Forage conditions are affected adversely by weather patterns.

Pronghorn populations are indicators of management activities that affect grassland habitats. Adjacent grasslands on private property are being lost due to urbanization; making conservation of the remaining grasslands on public lands very important. The PNF manages only a small proportion of the grasslands; it is important that these areas be managed to maximize all opportunities that may benefit pronghorn.

Restoration of fire-dependent ecosystems (including the grasslands) is a high priority for the PNF. Future plans for the grasslands include the reduction of juniper density the use of prescribed fire to keep grasslands open and free of invasive woody species.

Native Fish and Stream Habitats

The conservation and restoration of native fishes throughout the Southwest is a controversial issue. Restoration efforts have focused on: (1) construction of fish barriers and/or (2) chemical renovation of streams with non-native fish populations and restocking with native species. The management for native fish, which for most species represents a non-sport fish, and the potential loss of sport fishing opportunities usually is divided amongst advocates and users. Another continuing issue is the increased population and urbanization on private lands surrounding the PNF and

inholdings within the PNF and how this has led to increasing pressure on threatened and endangered species' habitats (e.g., groundwater pumping and recreation activities), especially in and along the Verde River. Collaboration with city, county, state, and other federal agencies is ongoing and is needed to prevent impacts to stream systems on the PNF. Increased public awareness and outreach is also critical for keeping the non-consumptive, historical values that native fish and flowing streams provide to the arid West.

Other Issues

Other emerging wildlife issues include:

- The Incidence of noxious weeds are expanding and could eventually impact a variety of key wildlife habitats.
- Timing and intensity of potential wildfires, as a result of increases in fuel levels, could threaten Mexican spotted owl and Northern goshawk habitats and populations on the PNF.
- Designing and implementing projects is a challenge because of the complexity of land ownership patterns in the wildland-urban interface and the increased resource objectives for fuels, vegetation, and forest health.
- The pumping of groundwater on private lands may impact flows in the Verde River.
- Unmanaged recreation, including illegal off-highway vehicle use, on some areas of the PNF threatens wildlife and fish species and their habitats.

Section 6: Recommendations

Five "Needs for Change" Topics

Of the topics listed in Section 5 (Emerging Issues), five were identified as "Needs for Change" during recent reviews and revision of the 1987 Forest Plan:

1. Restore vegetation structure, composition, and desired characteristics of fire to selected ecosystems while using adaptive management to respond to citizen concerns related to smoke emissions.
2. Maintain and improve watershed integrity to provide desired water quality, quantity, and timing of delivery.
3. Provide sustainable, diverse recreation experiences that consider population demographic characteristics, reflect desires of local communities, avoid overcrowding and user conflicts, and minimize resource damage.
4. Provide desired habitat for native fish species.
5. Enhance the value of PNF-provided open space by defining visual character within areas near or viewed by those in local communities

Alternative Methods to Monitoring

Budget limitation was the item listed most often as a barrier to effective monitoring. The PNF should expand its efforts at monitoring by increasing involvement of volunteers in the monitoring program. This could be especially effective in the area of noxious weed identification and inventory, and for monitoring management indicator species.

Section 7: Certification of Forest Plan Sufficiency

I have reviewed this annual Forest Plan Monitoring and Evaluation Report for Fiscal Year 2012 and determined that:

- While management activities on the Prescott National Forest continue to lead toward desired conditions, Forest Plan Needs for Change should be addressed during the revision of the 1987 Forest Plan.
- The report is responsive to monitoring information as identified in chapter 5 of the 1987 Forest Plan. The monitoring plan and monitoring activities conducted by the Prescott National Forest are based on National Forest Management Act regulations and Forest Service Manual guidance.

Therefore, I have determined that the 1987 Forest Plan, as currently amended, remains sufficient to guide implementation activities over the next fiscal year until revisions to the 1987 Plan are completed. A Record of Decision for the revised Land Management Plan is expected on or about January 2014.

/s/ Thomas A Torres — June 7, 2013

Tom Torres, Acting Forest Supervisor — Date